WHAT IS CLAIMED IS:

1. Aminooxy-cyclodextrin derivatives of the formula 1:

$$CD - (X - Y - ONH_2)_n \quad , \qquad (1)$$

wherein
CD is a mono- or polydeoxy α-, β- or γ-cyclodextrin, carrying in its 6-, 3- and/or 2-position the aminooxy function containing group ($X-Y-ONH_2$), and optionally carrying further substituents different from ($X-Y-ONH_2$) in their 6-, 3- and/or 2-positions, and wherein Y is a linker group between the aminooxy group and the mono- or polydeoxy-CD-group,
X is a functional group or an atom necessary to connect the linker Y and the deoxy CD group, or Y is a direct bond when X is a direct bond,
and n is ≥ 1, but ≤ 24, 21 and 18 for α-, β- or γ-cyclodextrin, respectively, as well as the aminooxy protected derivatives thereof, especially ethoxy-ethylidene protected aminooxy and acetone oxime derivatives thereof.

2. A derivative according to claim 1, wherein Y and X are both direct bonds.

3. A derivative according to claim 1 or 2, wherein one or more of the primary hydroxy groups at a 6-position of α-, β- or γ-CD are substituted with a $X-Y-ONH_2$ fragment, wherein X and Y have the meaning of claim 1.

4. A derivative according to ~~any one of~~ claims 1 ~~and 3~~, wherein Y is a ~~linear~~ or branched alkylene, alkenylene with one or more double bounds which may be either isolated or conjugated, alkynylene with one or more triple bonds which may be either isolated or conjugated, or arylene or arylalkylene fragments where aryl may be substituted or not substituted, whereby the alkylene, alkenylene and alkynyle-

ne fragments may be linear or branched and preferably contain 2-12 C-atoms in the chain, and one or more of the chain members (methylene groups) may be replaced by -NH-, -O-, -S-, -S-S-, -C(O)NH, -C(O)O-, -OP(O)(OH)O-, -S(O)-, SO_2-, -CHR-, where R is preferably alkyl, aryl, -OR', $-NH_2$, -NHR', $-NR'_2$, -OH, -COOH, or $-ONH_2$ groups and where R' is alkyl, aryl, or acyl.

5. A derivative according to any one of the claims 1 ~~- 3~~ and 4, wherein X is -O-, -S-, -NH-, -NR"-, -OCO-, -NH-O-, =NO-, -NHC(O)-, -OP(O)(OH), -R"C=NO-, where R" is linear or branched lower alkyl.

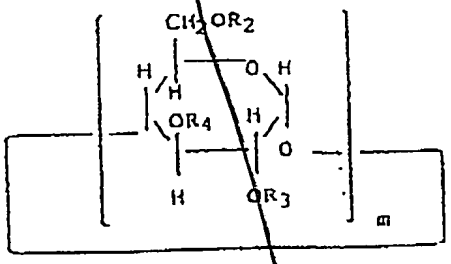
6. A derivative according to the claims 4 ~~or 5~~, wherein Y is alkylene containing 2-12 C-atoms, wherein one or more of the chain members may be replaced by -NH-, -O-, -S-, -C(O)NH-, -C(O)O-, or CHR_1 wherein R_1 is methyl, ethyl or propyl and X is -O-, -S-, -NH-, -OC(O)-, and -NH-C(O)-.

7. Any compound according to claim 1 ~~- 6~~, wherein one or more of the hydroxyl groups at 6-, 3-, and/or 2- position(s) are substituted with a group, for example, H_2N- , HS-, -COOH, alkoxy- , such as C_1 - C_6- alkoxy- , aryloxy-, wherein aryl is preferably phenyl, benzyl, or tolyl, or with acyloxy group, wherein acyl preferably originates from C_1 - C_6- carboxyl, or benzoic acids, and wherein alkyl-, aryl-, and acyloxy- can additionally contain functional groups like H_2N- , HS-, -COOH in their structure, in side chain or in aromatic ring.

~~8. Method according to claim 1 or 3 for preparing compound of formula I, wherein X is O, and wherein:~~

Subt B3

a) cyclodextrin of formula (3)



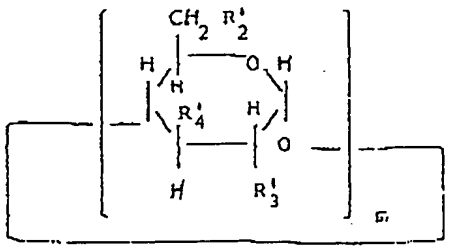
(3)

including R_2, R_3, and R_4 are hydroxyl groups or substituents defined in claim 7, exemplified by unsubstituted alkoxy, like C_1 - C_6- alkoxy or aryloxy like phenyl-, benzyl-, tolyl-, or acyloxy, in which substituents' functional groups, if they exist, are protected whenever necessary, whereby at least one of the positions 6, 3, and/or 2 contain hydroxyl group, preferably 6- hydroxy group, is alkylated with a compound according to formula (3'):

$$Z - Y - ON = C(CH_3) W \qquad (3')$$

wherein W means group $-OC_2H_5$ or $-CH_3$, m and Y are as defined in claims 1 or 3, and Z is a reactive group, preferably Cl, Br, I, tosyl, mesyl or epoxy group, and optionally protecting group(s) is/are removed, or

b) a cyclodextrin derivative of formula (4) is alkylated



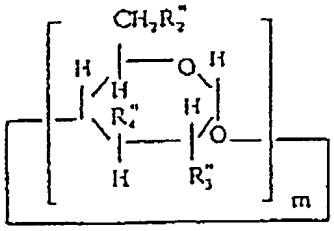
(4)

wherein R'_2, R'_3, R'_4 are hydroxy or activated groups like tosyl, mesyl, halogen, ester, epoxy, preferably tosyl or halogen, possibly bound through a linker group, like alkylen, or substituent as defined in claim 7, said substituent being in a protected form if necessary, whereby the CD-derivative contains at least one of said activated groups with the compound of formula (4')

$$HX - Y - ON = C(CH_3)W \qquad (4')$$

wherein X and Y are as in claim 1, or as in 3 and 4, and X is preferably S or HN- fragment and Y has the meaning defined in claim 6, and W is defined as above, and protecting group(s) is/are possibly removed if necessary, or

c) a cyclodextrin derivative of compound with formula (5)



(5)

wherein at least one of the groups R''_2, R''_3, and R''_4 mean-thiol-, amino-, karboxy- etc. group possibly linked directly to deoxy-CD-ring, or mean alkylenoxy- or acyloxy groups which contain at least one thiol-, amino-, karboxy-, etc. group, or their derivative, and the remaining funtional groups are hydroxyl groups or they have the meaning described in claim 7 for the substituents, and exist, if necessary, in a protected form, typical example being unsubstituted alkoxy, aryloxy, or acyloxy, modified with an appropriate aminooxy protected substituted hydroxylamine according to formula (3'), after which the protecting

group(s) are removed, or

d) CD-derivative of formula (5), which contains one or more of keto or aldehyde groups, possibly bound through a linker group, is allowed to react with bisaminooxy alkanes of formula (5')

$H_2NO\ (CH_2)_tONH_2$ (5')

wherein t is 2-12, and wherein one of the methylene groups can be substituted with oxygen or sulfur atom, or wherein -NH- or -S-S- groups, and a protecting group is removed if necessary.

9. The use of any of the CD-derivatives of claim 1 for preparation of oximes with ketones or aldehydes, for preparation of aminooxy derivatives of nucleotide- and nucleoside pyrimidines or purines, or for preparation of inclusion complexes with guest molecules by said CD-derivatives.

10. Oximes of any one of the aminooxy-CDs of claim 1 with a synthetic or natural aldehydes or ketones.

11. Derivatives of nucleotide or nucleoside pyrimidines or purines with aminooxy-CDs, wherein aminooxy group is linked to heterocyclic ring, preferably through pyrimidine C-4 and purine C-6, and wherein pyrimidine and purine are preferably cytosine or adenine as such or as their derivatives.

Subst B4

add B5